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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/625,328

07/23/2003

Sebastien Weitbruch

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EXAMINER

CASCHERA, ANTONIO A

ART UNIT

PAPER NUMBER

2628

MAIL DATE

DELIVERY MODE

10/18/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/625,328	Applicant(s) WEITBRUCH ET AL.	
	Examiner Antonio A. Caschera	Art Unit 2628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 September 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 17-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 17-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 August 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. Receipt is acknowledged of a request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e) and a submission, filed on 09/07/2010.

Priority

2. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in the pending application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-6, 17-23 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishii et al. (U.S. Patent 6,288,698) in view of Kawakami et al. (U.S. Patent 6,661,470).

In reference to claim 1, Ishii et al. discloses a method for processing video data in a video data processing device for display on a display device having a plurality of luminous elements to suppress a dithering pattern from appearing to a viewer observing a moving object on the display device, the moving object represented by said video data (see column 1, lines 35-53, column 2, lines 35-38, 46-55 and Figure 1A wherein Ishii et al. discloses a method and system for control

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of gray scale and brightness characteristics of a display device so that artifacts are smoothed including video dither and checker-like patterns.), the method comprising:

applying a dithering function to at least part of said video data in a dithering device of the video data processing device (see column 4, lines 48-64 and Figures 1A & 6 wherein Ishii et al. discloses applying dither patterns to input RGB data. Ishii et al. explicitly discloses inverting the patterns in certain conditions which the Examiner interprets as functioning equivalent to a dithering function since the patterns are applying certain values at certain conditions.), wherein the dithering improves a grey scale portrayal of video pictures of said video data (see column 2, lines 50-59 wherein Ishii et al. discloses stabilizing gray-scale display of data by controlling the RGB input data via programmable parameters such as dithering pattern characteristics.),

computing at least one motion vector from said video data, in a motion estimator device of the video data processing device, said video data representing the object in motion on the display device;

changing at least one of the phase, amplitude, spatial resolution and temporal resolution of said dithering function in accordance with said at least one motion vector representing the movement of a moving object on a picture when applying the dithering function to said video data in the dithering device of the video data processing device to suppress a dithering pattern from appearing to a viewer observing the moving object on the picture; and

outputting the dithered video data from the video data processing device to the display device to suppress a dithering pattern from appearing to a viewer *observing the moving object on the picture on the display device* (see column 1, lines 35-53, column 2, lines 35-38, 46-55,

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column 3, lines 35-50 and Figure 1A wherein Ishii et al. discloses outputting the dithered data to a display device so that artifacts are eliminated including video dither and checker-like patterns.).

Ishii et al. does not explicitly disclose computing at least one motion vector representing movement of a moving object however Kawakami et al. does. Kawakami et al. discloses a moving picture display method and apparatus for effectively restraining a false contour generating when a moving picture is displayed (see column 1, lines 5-10). Kawakami et al. explicitly discloses the moving picture data as video signal data as the device of the invention receives video signal data and performs processing thereupon (see column 8, lines 20-32 and Figure 3). Kawakami et al. discloses a motion vector detector which detects a motion vector in a block of each R, G, B color components (see column 12, lines 18-27). Note, it is seen as inherent that the video signal data represented by R, G, B color components in Kawakami et al., inherently comprises at least some sort of "object" in the data of which are made up of such R, G, B components as seen in at least Figure 14 which depicts pixel motion block matching detection. Kawakami et al. explicitly discloses utilizing the determined motion vector data to correct at least the spatial resolution (via pixel offset correction data supplied in a table) of the pixel video image data (see columns 16-17, lines 46-13, column 18, lines 14-25 and Figures 7-11). Kawakami et al. explicitly discloses performing such correction in order to correct the light contour of the moving data when output to a display as viewed by a user, the output produced by the halftone luminance of the pixels in a PDP type display (see column 1, lines 14-20, column 2, lines 23-34, 46-51 and column 4, lines 28-31). It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the motion vector detection in halftone contour video image correction techniques of Kawakami et al. with the gray scale

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dithering techniques of Ishii et al. in order to output a moving picture without associated artifacts in various types of display technologies.

In reference to claims 2 and 18, Ishii et al. and Kawakami et al. disclose all of the claim limitations as applied to claims 1 and 17 respectively in addition, at least Ishii et al. inherently discloses the dithering patterns having two spatial dimensions (x,y or row,col) and a temporal dimension (frame count/number) (see column 2, lines 50-58 and Figure 6).

In reference to claims 3 and 19, Ishii et al. and Kawakami et al. disclose all of the claim limitations as applied to claims 1 and 17 respectively in addition, Ishii et al. discloses applying dither patterns to input RGB data (see column 4, lines 48-64 and Figures 1A & 6).

In reference to claims 4 and 20, Ishii et al. and Kawakami et al. disclose all of the claim limitations as applied to claims 1 and 17 respectively in addition, Ishii et al. discloses applying dither patterns to input RGB data (see column 4, lines 48-64 and Figures 1A & 6). Note, the Examiner interprets the RGB data or subpixel data that the dither patterns of Ishii et al. are applied to equivalent to Applicant's "luminous elements" and "cells" of the display device.

In reference to claims 5 and 21, Ishii et al. and Kawakami et al. disclose all of the claim limitations as applied to claims 1 and 17 respectively in addition, Ishii et al. discloses the dithering function as a 4-bit function since patterns are configured 4x4 and accessed using 0001-1111 addressing (see column 4, lines 48-64 and Figure 6).

In reference to claims 6 and 22, Ishii et al. and Kawakami et al. disclose all of the claim limitations as applied to claims 1 and 17 respectively in addition, Kawakami et al. explicitly discloses the motion vector determined for each pixel of a block of R, G, B components (see columns 16-17, lines 65-13 and Figure 8).

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In reference to claim 17, claim 17 is equivalent in scope to claim 1 and is therefore rejection under like rationale. In addition to the above rationale as applied to claim 1 above, claim 17 further discloses the device for performing the dithering including a dithering device, a motion estimator connected to the dithering device and a means for outputting the dithered data to the display device. As can be seen in Ishii et al., Figure 1A, Ishii et al.'s configuration of hardware includes dithering logic and an output mux. As per the specific limitation of the "motion estimator," Kawakami et al. discloses a motion vector detector which detects a motion vector in a block of each R, G, B color components (see column 12, lines 18-27 and #3 of Figure 3). It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the motion vector detection in halftone contour video image correction techniques of Kawakami et al. with the gray scale dithering techniques of Ishii et al. in order to output a moving picture without associated artifacts in various types of display technologies.

In reference to claim 23, Ishii et al. and Kawakami et al. disclose all of the claim limitations as applied to claim 17 in addition, Kawakami et al. explicitly discloses the motion vector to comprise of two components defining two spatial dimensions, x, y (see Figure 8, the results of the motion vector detector).

In reference to claim 25, Ishii et al. and Kawakami et al. disclose all of the claim limitations as applied to claim 17 in addition, Ishii et al. discloses a FRC (frame rate control) logic connected to the dithering logic for temporally controlling the dithering based upon video data frames (see columns 5-6, lines 39-53 and Figures 1A, 3).

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4. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishii et al. (U.S. Patent 6,288,698), Kawakami et al. (U.S. Patent 6,661,470) and further in view of Wu et al. (U.S. Patent 6,469,708).

In reference to claim 24, Ishii et al. and Kawakami et al. disclose all of the claim limitations as applied to claim 17. Neither Ishii et al. nor Kawakami et al. explicitly disclose a gamma function means pre-correcting input data before it is passed to the dithering means. Wu et al. discloses an image dithering technology that implements a gamma table for performing gamma correction upon input data before such data is dithered (see column 1, lines 9-12, column 2, lines 11-23 and Figures 1-2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the gamma correction techniques of Wu et al. with the motion vector detection techniques of Kawakami et al. and gray scale dithering techniques of Ishii et al. in order to correct for nonlinearities in the different display devices which would provide a more accurate signal to perform processing upon initially, ultimately leading to a more accurate output.

Response to Arguments

5. Applicant's arguments, see pages 5-9 of Applicant's Remarks, filed 09/07/10 and the Remarks established in the interview summary form of 08/10/10, with respect to the 35 USC 103 rejection of claims 1-6 and 17-25 based upon Beck, have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Ishii, Kawakami et al. and Wu et al..

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Antonio Caschera whose telephone number is (571) 272-7781. The examiner can normally be reached Monday, Tuesday, Thursday and Friday between 7:00 AM and 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kee Tung, can be reached at (571) 272-7794.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

571-273-8300 (Central Fax)

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (571) 272-2600.

/Antonio A Caschera/

Primary Examiner, Art Unit 2628

10/18/10